

(No Model.)

F. LIGHTFOOT.  
RAILROAD RAIL JOINT.

No. 262,438.

Patented Aug. 8, 1882.

Fig. 1.

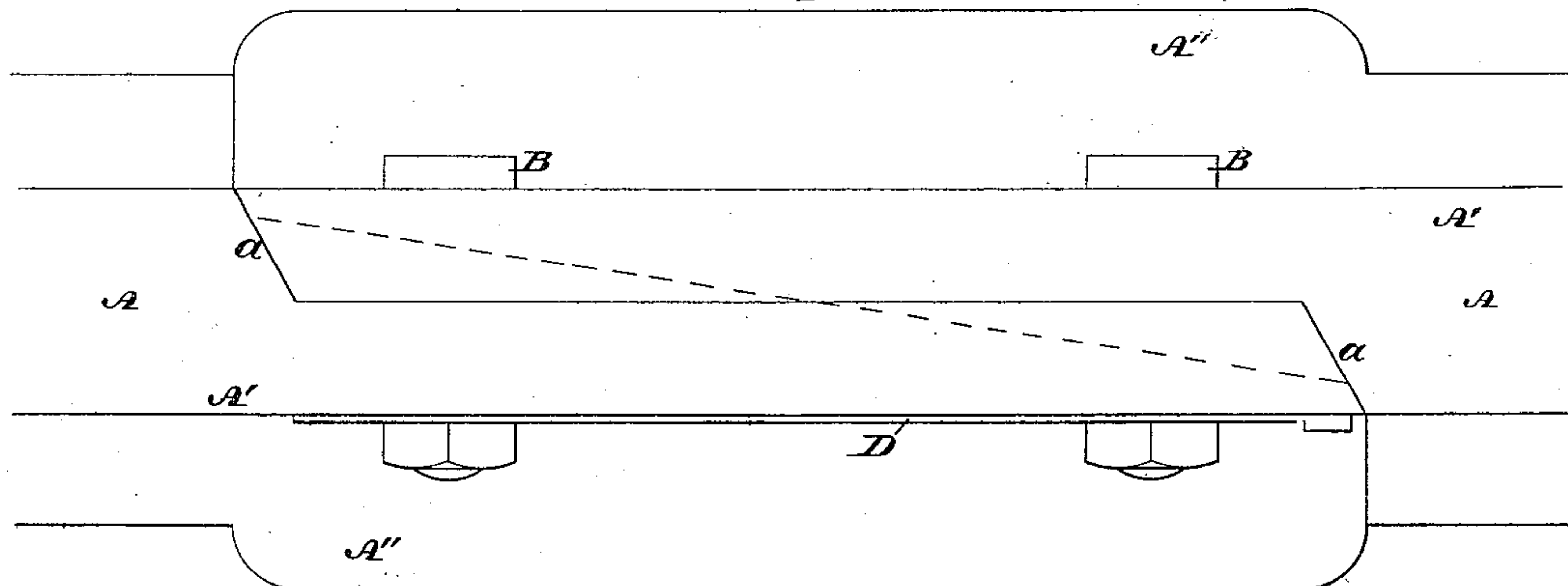


Fig. 2.

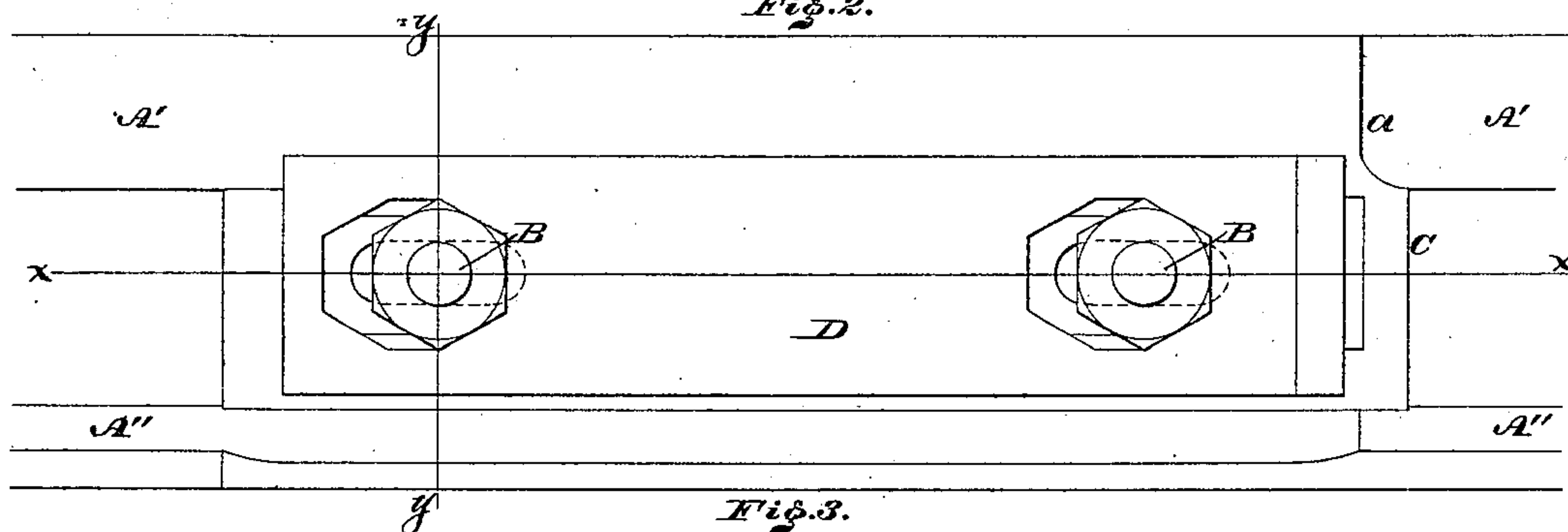


Fig. 3.

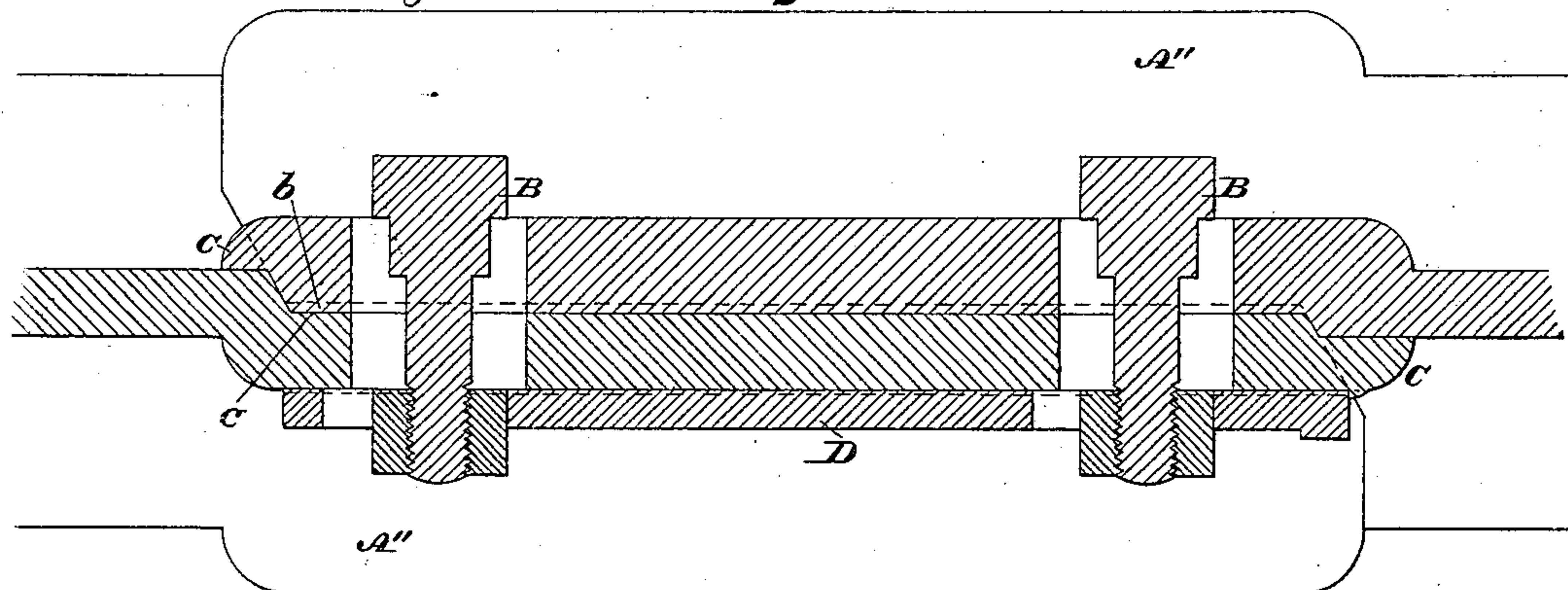
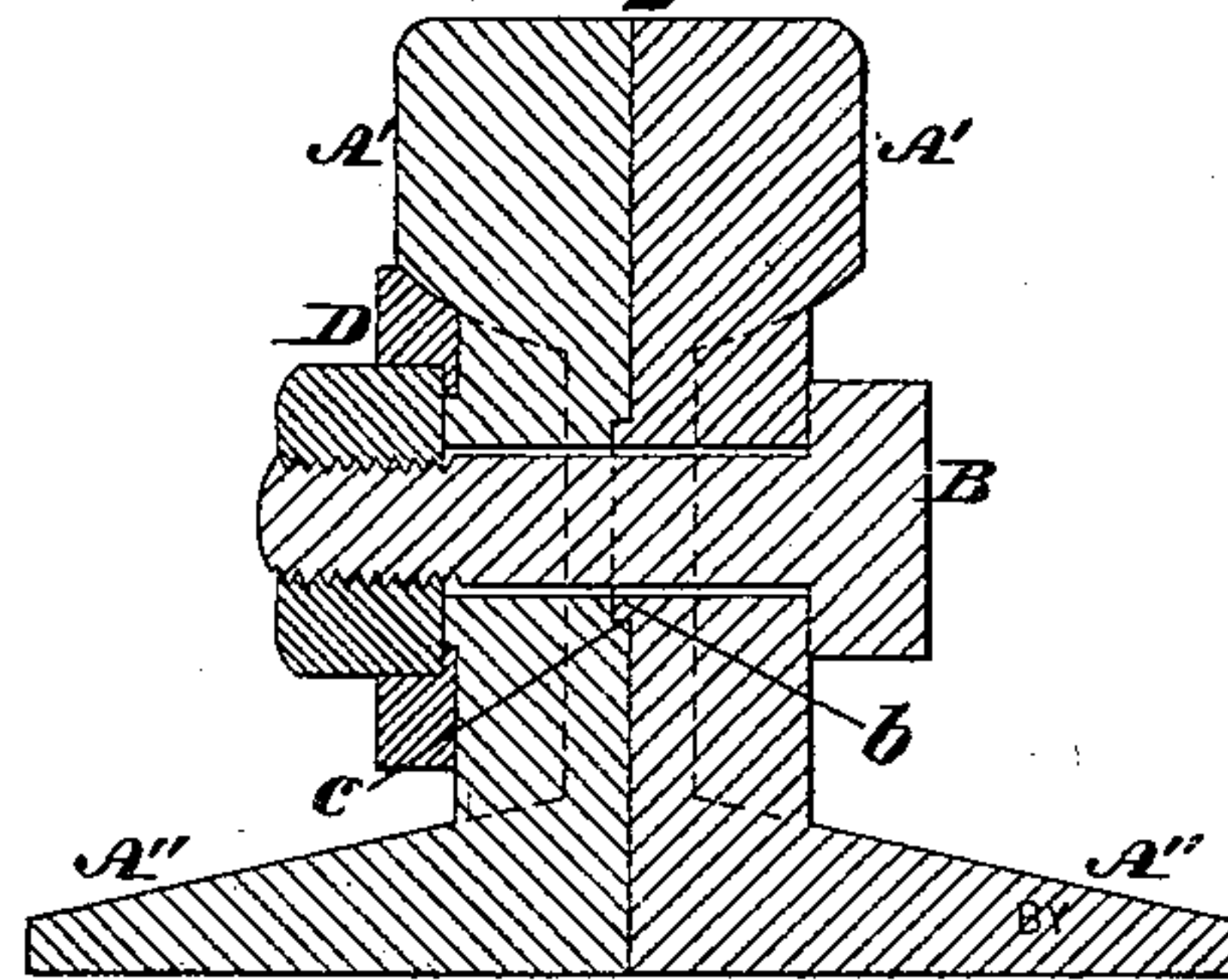


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 262,438, dated August 8, 1882.

Application filed March 30, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS LIGHTFOOT, a citizen of the United States, residing at Media, in the county of Delaware, State of Pennsylvania, have invented a new and useful Improvement in Railroad-Rail Joints, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of a railroad-rail embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a horizontal section in line  $x x$ , Fig. 2. Fig. 4 is a vertical section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of railroad-rails having their ends upset and so shaped that they retain their full weight of metal and lap one another, and so that when the rails are connected the tread of the rails at the ends is of the same width as the original rails, and the rails possess great strength, simplicity, and smoothness, as will be hereinafter fully set forth.

Referring to the drawings, A represents the ends of two adjacent rails of a railroad, which ends from the point  $a$  are upset and stamped or wrought to about half the width of the remainder of the rails, whereby the tread of the upset ends of the two connected rails which lap one another form a tread of the same width as the original rails. By upsetting the rails at their ends, as stated, they are not weakened or impaired, but retain their full weight of metal, whereby the ends are strong and durable, or even stronger and more durable than the remaining length of the rails. Furthermore, as the ends of the rails lap one another, the wheels of the cars or train run on both treads, thus preventing jumping of the wheels from one rail to another or the jarring of the wheels in making transit over the joints and the injury of the texture of the rails, wheels, and axles by cold-hammering.

In order to connect the lapped ends of the rails, I pass through openings in the same bolts B B, which are provided with tightening-nuts,

and, furthermore, form on the end of each rail between the tread and base a longitudinally-projecting lip, C, which overlaps the neck of adjacent rail between the heads A' and base A'' thereof, thus serving to connect the ends of two adjacent rails at their sides and preventing rising thereof. The inner face of the end portion of one rail is also formed with a tongue,  $b$ , and that of the other rail with a groove,  $c$ , the tongue and groove extending horizontally and longitudinally and interlocking, thus permitting the ends to move on each other during expansion and contraction of the rails, and also serving to prevent the rising of the rails at the joint. Again, the point or shoulder  $a$  of one rail is opposite the extreme end of the other rail, and this, with the other provisions stated, obviates the necessity of fish-plates at the joints of the rails.

In the drawings I show a plate, D, for locking the nuts of the bolts B, this, however, forming no part of the present invention.

The contour of the joint of the rails formed by the upset ends thereof may be either the full or dotted lines shown in Fig. 1 or varied.

I am aware that it is not new to provide a rail with a lip or lug which is introduced into a recess in a second rail to lock the two together. I therefore do not broadly claim the same.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Railroad-rails having their contiguous ends upset so as to be reduced in width though retaining full weight, the upset ends lapping so as to form a tread about equal to that of the full rail.

2. A railway-rail having a longitudinally-projecting lip, C, in combination with a second rail, said lip being introduced into the space between the tread and the base of said second rail and overlapping the neck thereof, substantially as shown.

FRANS. LIGHTFOOT.

Witnesses:

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A. P. GRANT.